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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,235	03/09/2004	Michael Charles Shelton	71626 US03	2129
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POLLY C. OWEN			EXAMINER	
P.O. BOX 511			HAIDER, SAIRA BANO	
KINGSPORT, TN 37662-5075			ART UNIT	PAPER NUMBER
			1796	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/796,235	Applicant(s) SHELTON ET AL.	
	Examiner Saira Haider	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-64 is/are pending in the application.
- 4a) Of the above claim(s) 2-4, 6-13, 18 and 42-64 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 14-17 and 19-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/ are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/27/2007</u> . | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1, 5, 14-17, 19-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al. (US 5,668,273).
3. Allen discloses carboxymethyl cellulose esters, specifically a carboxymethyl cellulose acetate butyrate (CMCAB) having: a degree of substitution per anhydroglucose unit (DS/AGU) of carboxymethyl of 0.20 to 0.75, a DS/AGU of hydroxyl from about 0.10 to 0.70, a DS/AGU of butyryl of about 0.10 to 2.60 and a DS/AGU of acetyl of 0.10 to 1.65, and having an inherent viscosity of 0.20 to 0.70 dL/g, as measured in a 60/40 (wt./wt.) solution of phenol/tetrachloroethane at 25 °C (col. 2, line 66 to col. 3, line 45).
4. The Allen reference fails to anticipate the claimed inherent viscosity range of 0.05 to 0.15 dL/g (or the claimed range of 0.07 to 0.13, as per claim 39), and the reference fails to disclose the claimed molecular weight and polydispersity values.
5. In reference to the inherent viscosity range, it is noted that the Allen reference discloses a lower limit of 0.20 dL/g, wherein it is the examiner's position that one skilled in the art would have expected the composition of the Allen reference to have the same properties as the claimed composition. Additionally, a difference of 0.05 dL/g (or a difference of 0.07 dL/g) in the inherent viscosity is not expected to change the properties of the composition. It has been held that a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985).

6. In reference to the claimed molecular weight and polydispersity values, it is noted that one of ordinary skill in the art recognizes that a reduction in the viscosity indicates a reduction in the molecular weight. Thus, the molecular weight is considered an inherent property of the aforementioned prior art composition. Thus, in view of the structural, chemical and viscosity similarities of the claimed composition that that of the prior art, the properties [molecular weights, polydispersity, acid number (claims 14-17), and clear solution formation (claims 20-35)] applicant claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Note, that because the references do not expressly teach or address the properties of the claimed invention, it does not mean that the properties are not inherently disclosed. Teaching the same compound(s) inherently discloses the corresponding properties. The references cannot possibly teach or address all of the properties, but implicitly all of the properties are present.

7. Once a reference teaching product appearing to be substantially identical is made the basis of a rejection, and the examiner presents evidence or reasoning tending to show inherency, as done above, the burden shifts to the applicant to show an unobvious difference. See MPEP § 2112.

8. Claims 1, 5, 14-17, 19-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obie (WO 01/35719 A2).

9. Obie discloses carboxymethyl cellulose esters, specifically a carboxymethyl cellulose acetate butyrate (CMCAB) having: a degree of substitution per anhydroglucose unit (DS/AGU) of carboxymethyl of 0.20 to 0.75, a DS/AGU of hydroxyl from about 0.10 to 0.70, a DS/AGU of butyryl of about 0.10 to 2.60 and a DS/AGU of acetyl of 0.10 to 1.65, and having an inherent viscosity of 0.20 to 1.70 dL/g, as measured in a 60/40 (wt./wt.) solution of phenol/tetrachloroethane at 25 °C (page 7, 2<sup>nd</sup> full paragraph).

10. The Obie reference fails to anticipate the claimed inherent viscosity range of 0.05 to 0.15 dL/g (or the claimed range of 0.07 to 0.13, as per claim 39), and the reference fails to disclose the claimed molecular weight and polydispersity values.

11. In reference to the inherent viscosity range, it is noted that the Obie reference discloses a lower limit of 0.20 dL/g, wherein it is the examiner's position that one skilled in the art would have expected the composition of the Obie reference to have the same properties as the claimed composition. Additionally, a difference of 0.05 dL/g (or a difference of 0.07 dL/g) in the inherent viscosity is not expected to change the properties of the composition. It has been held that a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985).

12. In reference to the claimed molecular weight and polydispersity values, it is noted that one of ordinary skill in the art recognizes that a reduction in the viscosity indicates a reduction in the molecular weight. Thus, the molecular weight is considered an inherent property of the aforementioned prior art composition. Thus, in view of the structural, chemical and viscosity similarities of the claimed composition that that of the prior art, the properties [molecular weights, polydispersity, acid number (claims 14-17), and clear solution formation (claims 20-35)] applicant claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Note, that because the references do not expressly teach or address the properties of the claimed invention, it does not mean that the properties are not inherently disclosed. Teaching the same compound(s) inherently discloses the corresponding properties. The references cannot possibly teach or address all of the properties, but implicitly all of the properties are present.

13. Once a reference teaching product appearing to be substantially identical is made the basis of a rejection, and the examiner presents evidence or reasoning tending to show inherency, as done above, the burden shifts to the applicant to show an unobvious difference. See MPEP § 2112.

***Response to Arguments***

14. Applicant has argued that both the Allen and the Obie references numerical range values for the inherent viscosity, molecular weights, and a polydispersity which do not overlap the claimed range. It is noted that the both the Allen and Obie examples applicant relies on to support their position were not the basis of the rejection. Further, the Allen example is irrelevant in that it does not even meet the claimed DS values. The Obie example is irrelevant in that it does not even meet the claimed inherent viscosity. Thus, reliance on the cited Allen and Obie examples is improper and the rejections are maintained.

15. Applicant has essentially argued that the cited Ti Metal case does not support the obviousness conclusion. Applicant has attempted to refute the examiner's obviousness position regarding the claimed inherent viscosity by citing the data provided in the herein application's specification. The examiner has thoroughly considered the evidence provided in both the specification and the remarks, however, the evidence is insufficient to overcome the rejection.

16. As per MPE § 2144.05, applicant can rebut a presumption of obviousness based on a claimed invention that falls within a prior art range by showing "(1) [t]hat the prior art taught away from the claimed invention...or (2) that there are new and unexpected results relative to the prior art." *Iron Grip Barbell Co., Inc. v. USA Sports, Inc.*, 392 F.3d 1317, 1322, 73 USPQ2d 1225, 1228 (Fed. Cir. 2004).

17. Applicant has failed to show that the prior art teaches away from the claimed invention. Applicant has argued that both the Allen and the Obie reference teach away from the claimed

invention. Applicants have cited US 5,994,530, as cited by Obie in support of their position.

Applicants allege that the references disclose that an increase in the viscosity is beneficial in water borne compositions and provides superior compatibility (Allen @ col. 2, lines 53-62; '530 @ col. 3, lines 59-65). The entire disclosure of both the Allen and '530 references at the cited portion states that the waterborne compositions comprising the CMC esters exhibit an increase in viscosity with a small increase in concentration of CMC ester when treated with ammonia or an amine. Both Allen and the '530 reference fail to explicitly state what applicants have alleged is taught. The references state "[t]his is beneficial in waterborne coatings," such that upon the discussed treatment there is an increase in viscosity of the waterborne coatings, applicants claims are not drawn to this specific type of coating, wherein the cellulose esters are treated accordingly. Thus, the cited disclosures fail to teach away from the claimed invention.

18. The fact that Allen and the '530 reference recognize that inclusion of cellulose esters at a specific concentration in amine neutralized waterborne dispersions function as rheology modifiers, wherein the cellulose esters show exponential viscosity changes. Rapid viscosity build (exponential increases in viscosity) is useful in reducing runs and sags in waterborne spray applications (Allen @ col. 6, line 24-26; '530 @ col. 9, line 31-33). The reference fail to show that the prior art teaches away from the claimed invention. The references conclude that cellulose esters are useful as rheology modifiers when present in a specific concentration in a specific waterborne dispersion. Applicant's claims are not drawn to this specific type of waterborne composition, wherein the cellulose ester is present in a specific concentration. Thus, the cited disclosures fail to teach away from the claimed invention.

19. Applicant has argued that Allen teaches that an increase in viscosity helps prevent sagging of the coating (col. 16, lines 18-21). Applicant has improperly characterized the Allen reference, the

entire disclosure of the Allen reference at/near the cited portion states that the viscosity increase on evaporation could help prevent sagging of the coating during a spraying operation. This characterization applies for the particular exemplified CMCAB present in the exemplified pigmented thermoplastic automotive basecoat. Again, applicant's claims are not drawn to this specific type of basecoat composition comprising the exemplified CMCAB in the stated amounts. Thus, the cited disclosures fail to teach away from the claimed invention.

20. In all of the above allegations of teaching away, the nature of the teaching is rendered highly relevant and is weighed into substance to determine that the Allen and '530 references fail to teach away from the combination. Thus the rejection is maintained. See MPEP § 2145.

21. The data provided by applicant fails to show that there are new and unexpected results relative to the prior art. The showings provided are insufficient to establish unexpected results of the claimed subject matter for various reasons.

22. Firstly, the unexpected results are not commensurate in scope with the claimed invention, applicants claims are generic to the claimed components, whereas the examples are drawn to species of the claimed components. Secondly, applicant has claimed broad ranges for the DS values, the inherent viscosity, and the molecular weights, whereas the examples are drawn to specific values of each of the components. Attention is directed to MPEP § 716.02(d)(I), which states that nonobviousness of a genus or claimed range may be supported by data showing unexpected results from testing a narrower range if one of ordinary skill in the art would be able to determine a trend in the exemplified data which would allow the artisan to reasonably extend the probative value thereof. However, applicants have failed to provide an adequate basis for reasonably concluding that the great number and variety of compositions included in the claims would behave in the same manner as the tested composition.

23. Furthermore, the unexpected results must compare the claimed subject matter with the closes prior art to be effect to rebut a *prima facie* case of obviousness. See MPEP § 716.02(e).

Applicants' comparative examples are not the closest prior art; thus the unexpected results are held deficient in this regard.

24. Additionally, a side-by-side comparison should hold all variable the same except for that which is alleged to be critical. *Ex Parte Raske*, 28 USPQ2d 1306. Applicant has failed to hold all the variables, except the critical variable constant. For instance, compare Example 2 to Example 4, the DS of butyryl varies by 0.17, the DS of acetyl ester varies by 0.13, the DS of propionyl varies by 0.01, the DS of carboxymethyl varies by 0.02, the inherent viscosity varies by 0.007, and the number average molecular weight varies by 3526. Thus, given that at least 4 variables are not held constant, it cannot be readily determined that a change in the inherent viscosity changes various properties, including the molecular weight.

25. Applicants' attention is directed to MPEP §716 which discloses the requirements for effectively rebutting a *prima facie* case of obviousness based on unexpected results.

26. In response to applicant's arguments regarding the inherency position, as per MPEP § 2112, once a reference teaching product appearing to be substantially identical is made the basis of a rejection, and the examiner presents evidence or reasoning tending to show inherency, as done above, the burden shifts to the applicant to show an unobvious difference. "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on 'inherency' under 35 U.S.C. 102, on '*prima facie* obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect

to product-by-process claims. *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

27. Applicant has failed to prove that the prior art products do not necessarily or inherently possess the characteristics of the herein claimed product. Thus, the rejection is maintained.

### ***Conclusion***

28. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saira Haider whose telephone number is (571) 272-3553. The examiner can normally be reached on Monday-Friday from 10am-6pm.

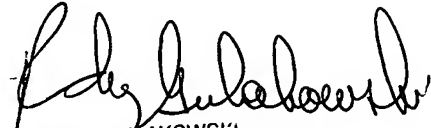
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Saira Haider  
Examiner  
Art Unit 1796

  
RANDY GULAKOWSKI  
SUPERVISORY PATENT EXAMINER  
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